

POZIN, M.Ye.; KOPYLEV, B.A.; SHILLING, N.K.

Solubility in the system $\text{NH}_4\text{H}_2\text{PO}_4 - \text{NH}_4\text{NO}_3 - \text{CO}(\text{NH}_2)_2 - \text{H}_2\text{O}$.
Zhur. prikl. khim. 38 no.1:22-28 Ja '65.

(MIRA 18:3)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta.

POZIN, M.Ye.; KOPYLEV, B.A.; TALMUD, M.M.

Solubility in the system $MgO - P_2O_5 - H_2O$ in its metastable state.
Zhur.prikl.khim. 38 no.6:1267-1273 Je '65.

(MIRA 18:10)

1. Leningradskiy tekhnologicheskii institut imeni Lentsveta.

POZIN, M.Ye.; KOPYLEV, B.A.; TALMUD, M.M.

Solubility and crystallization rate of dicalcium phosphate
in the system $MgO - CaO - P_2O_5 - H_2O$. Zhur.prikl.khim. 38
no.9:1904-1909 S '65. (MIRA 18:11)

L. Leningradskiy tekhnologicheskiy institut imeni Lensoвета.

Kopylov, M. R.

Apparatus for determination of nitrogen in gases
Leshkinen, M. R., A. Kopylov, J. A. Kopylov
Moscow, U.S.S.R. 104111
Inventors: Leshkinen, M. R., Kopylov, A. A., Kopylov, J. A.
Title: Apparatus for determination of nitrogen in gases

EM

Kappler, H.A.

Fertilizer. M. Kh. Pozin, M. A. Korylov, and B. I. Varshavskii. U.S.S.R. 107,487, Sept. 26, 1957. The acid phosphate-gypsum pulp, obtained in the H_2SO_4 -extr. of natural phosphates, is treated with a limestone or $Ca(OH)_2$ suspension. The mixed ppt. thus obtained is sepl. into a concd. fertilizer and gypsum by flotation in the presence of a collector such as the reagent IM-II or oleic acid.

M. Hesch

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1/1

POZIN, M.Ye.; KOPYLEV, B.A.; SHILLING, H.K.

Solubility in the system $\text{NH}_4\text{H}_2\text{PO}_4$ - NH_4NO_3 - KCl - H_2O . Zhur.
prikl. khim. 37 no.11:2341-2348 N 1964 (MIRA 18:1)

1. Leningradskiy tekhnologicheskii institut imeni Lomonosova.

SHARF, V.Z.; FREYDLIN, L.Kh.; OPARINA, G.K.; KHEYFETS, V.I.; BYCHKOVA, M.K.; KOPYLEVICH, G.M.; YAKUBENOK, V.V.

Production of isoprene from formaldehyde and isobutylene via 3-methyl-1,3-butanediol. Izv. AN SSSR. Ser. khim. no.9:1663-1665 '65.
(MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR i Opytno-konstruktorskoye byuro sinteticheskikh produktov Priokskogo soveta narodnogo khozyaystva, Tula.

KOPYLEVSKIY, V.I.

A special gauge internal dial. Stan. 1 instr. 26 no. 10:37 0'55.
(Gauges) (MLRA 9:1)

KOPYLOV, A.I.

Thromboembolism of the mesenteric vessels following labor. Akush.
i gin. 34 no.3:109-110 My-Je '58. (MIRA 11:6)

1. Iz rodil'nogo doma (glavnyy vrach Z.A.TSareva) Nikolayevska-
na-Amure.

(MISENTERY--BLOOD SUPPLY) (EMBOLISM)

KOPYLKOV, B.N.; SUKHOVA, V.G.

Complex use and the conservation of water resources of Western
Siberia and the Northern Sea Route. Probl. Arkt. i Antarkt.
no.10:81-86 '62. (MIRA 16:2)
(Siberia, Western—Water resources development)

KOPYLOV, A.

Machine for making wooden strips. Politekh.obuch. no.10:92 0 '58.
(MIRA 11:11)

1. Sverdlovskiy dvorets pionerov.
(Saws)

KOPYLOV, A. (UA3GH); BEZYMENSKIY, G. (UA3ALH)

Follow-up of articles published in our periodical. Radio no.11:
16-17 N '63. (MIRA 16:12)

1. Predsedatel' komiteta ul'trakorotkovolnovikov Federatsii
radiosporta SSSR (for Bezymenskiy).

KOPYLOV, A.

Kozak, K. Significance of the process of closed operation for steam engines.
p. 173.

RUDARSKO-METALERSKI ZBORNIK, Ljubljana, no. 3/4, 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955,
Uncl.

KOPYLOV, A.

Engines with caloric propulsion and regeneration of heat. p. 111.
(RUDARSKO-METALURGIJSKI ZBORNIK, Vol. 7, no. 2, 1954. Ljubljana, Yugoslavia)

SC: Monthly List of East European Accessions, (EASL), LC, Vol. 4, No. 4,
Apr 1955, Uncl.

KOPYLOV, A, HAMRIA, B.

KOPYLOV, A, HAMRIA, B. Standard operational processes for engines with compressed air.
p. 35

No. 1, 1955

RUDARSKO-METALURSKI ZBORNIK

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No.3
March, 1956

KOPYLOV, A.

Steam as the operational force in engines with recuperation of heat. p. 147
RUDARSKO-METALURSKI ZBORNIK. Ljubljana.
No. 2, 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 2,
Feb. 1956

Kopylov, Aleksei
CZECHOSLOVAKIA/Atomic and Molecular Physics Heat

D-4

Abs Jour : Ref Zhur - Fizika, No 3, 1958, No 5745

Author : Kopylov Aleksei

Inst : Not Given

Title : The Heat Emission of an Internal Combustion Engine May be Greater Than Unity

Orig Pub : Rud.-metal. zb., 1957, No 2, 81-94

Abstract : With the aid of calculations, the author shows that in an internal combustion engine, where the driving force is air at high temperatures and pressure, the heat emission η_t can be greater than, equal to, or less than unity. As T_z drops below $T_a (P_z/P_a)^{k-1/k}$ (a and z pertain to the initial and final states respectively, and the remaining symbols are the standard ones), i.e., as the heat producing ability of the air decreases, η_t increases and when $T_z = T_a$, the value of η_t becomes infinite. If $T_z = T_a (P_z/P_a)^{k-1/k}$, then $\eta_t = 1$. If $T_z > T_a (P_z/P_a)^{k-1/k}$, then $\eta_t < 1$.

Card : 1/1

KOPYLOV, A. (g. Sverdlovsk).

Model of jet airplane. IUn. tekhn. 2 no.9:13-14 8 '57. (MLRA 10:9)
(Airplanes---Jet propulsion---Modles)

KOPYLOV, A. (UA3GH)

Work in the 3.5 mc. band. Radio no.6:23 Je '61. (MIRA 14:10)
(Anat radio stations)

KOPYLOV, A.

We are building rocket-launching pads. IUn.tekh. 7 no.4:10-11
Ap '63. (MIRA 16:4)

(Models and modelmaking)

KOPYLOV, A.A., inzhener.

Brick cooling column. Masl.-shir.prom. 21 no.8:32-33 '55.

(MIRA 9:3)

1. Voronezhskiy rasmaslotrest.

(Oil industries--Equipment and supplies)

KOPYLOV, A.D. (Sverdlovsk).

How do we construct engineering models. Politekh. obuch. no. 6:73-77
Je '58.

(MIRA 11:6)

(Models and modelmaking)

KOPYLOV, A.D.

Worm reducing gears for technical models. Politekh. obuch. no.8:48-54
Ag '59. (MIRA 12:10)

1. Dvoretz pionerov, Sverdlovsk.
(Gearing, Worm)

KOPYLOV, A. G. Cand Biol Sci -- (diss) "Characteristics of electroencephalographic reactions to rhythmic ^{stimulation} ~~excitation~~ by light as an indication of the functional state of the human brain." Len, 1957. 13 pp 20 cm. (Len Order of Lenin State Univ im A. A. Zhdanov. Physiological Inst im Academician A. A. Ukhtomskiy), 100 copies (KL, 24-57, 117)

-25-

KOPYLOV, A.G.

USSR/Human and Animal Physiology - Nervous System. Sleep.

T-10

Abs Jour : Ref Zhur - Biol., No 13, 1958, 84625

Author : Kopylov, A.G.

Inst : University of Leningrad.

Title : Changes Occuring in the Functional State of the Brain
During the Development of Sleep in Man According to Elec-
trocephalographic Data on Rhythm Assimilation Curves.

Orig Pub : Vestn. Leningr. un-ta, 1957¹², No 15, 89-96

Abstract . : The following phenomena were observed in conditions of na-
tural and chloral hydrate induced sleep at the presence of
rhythmic light stimuli, as recorded by EEG [electroencepha-
lograph]: displacements of the treshold, optimum and dia-
pason of assimilated rhythms in the direction of low fre-
quencies, and delay of primary positive potentials as inhi-
bition progresses. These phenomena are ascribed to a

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KOPYLOV, A.G.

Peculiarities in the assimilation of the rhythm of luminous stimulations by the human cerebral cortex during inhibition caused by sleep.
Nerv. sist. no.1:105-115 +60. (MIRA 13:9)

1. Laboratoriya fiziologii nervnoy sistemy, Leningradskiy ordena
Lenina gosudarstvennyy universitet im. A.A. Zhdanova.
(CEREBRAL CORTEX) (SLEEP)
(ELECTROPHYSIOLOGY) (LIGHT--PHYSIOLOGICAL EFFECT)

KOPYLOV, A.G.

Changes in the physiological characteristics of the brain following
the action of narcotics and stimulants. Nerv. sist. no. 2:66-75
'60.

(ELECTROENCEPHALOGRAPHY) (NARCOTICS)

(MIRA 14:4)

(CAFFEINE--PHYSIOLOGICAL EFFECT)

КОПЫЛОВ, А.О.

Electrical reactions in various parts of the rabbit visual system and their changes during barbiturate anesthesia. Nerv. sist. (Leningrad) 2 no. 3: 43-50 '62. (MIR: 17:7)

2. Laboratoriya fiziologii nervnoy sistemy Fiziologicheskogo instituta imeni Ushakovskogo Leningradskogo universiteta.

KOPYLOV, A.G.

Effect of chloral hydrate on electric responses in corpora
quadrigemina and the cortex of the brain of a rabbit during
rhythmical light stimulation. Vest.LGU 17 no.21:143-148 '62.
(MIRA 15:12)

(CHLORAL) (ELECTROENCEPHALOGRAPHY)
(LIGHT—PHYSIOLOGICAL EFFECT)

KOPYLOV, A.G.

Analysis of brain potentials evoked by rhythmic photic stimulation.
Vest. LGU 19 no.3:178-181 '64. (MIRA 17:3)

KOPYLOV, A.I.

Simple transformer of coordinates for radio telescopes with an
azimuthal mounting. Izv. GAO 23 no.3:249-251 '64.

(MIRA 17:11)

L 27786-65 ENT(m)/EPA(s)-2/EPF(c)/T/EWP(j)/EPR/EWA(c) Pc-4/Pr-4/PS-4/Pt-10

WV/RH

ACCESSION NR: AP5004308

S/0191/65/000/002/0013/0015

AUTHOR: Spasskiy, S. S.; Kodolov, V. I.; Kopylov, A. I.; Obolonskaya, N. A.; Tarasov, A. I. 44
B

TITLE: The synthesis of polyethyleneglycol-fumarate-phenylphosphinate and its copolymerization with vinyl monomers

SOURCE: Plasticheskiye massy, no. 2, 1965, 13-15

TOPIC TAGS: polyethyleneglycol synthesis, polyfumarate synthesis, polyphenylphosphinate synthesis, vinyl copolymer, phosphorylated polymer, styrene copolymer, methyl methacrylate copolymer, unsaturated polyester

ABSTRACT: Phosphorus-containing, unsaturated, hetero-chain polymers were prepared and copolymerized with styrene, or with a mixture of styrene and methyl methacrylate to obtain stable, solid and non-combustible resins. Diethylphenylphosphinate was prepared by Geffer's method (Fosforoorganicheskiye monomery i polymery, Izd. AN SSSR, 1960) and polyethyleneglycol fumarate was obtained by melt condensation of maleic anhydride with ethyleneglycol (1:3) for 2 hrs. at 120C and subsequently at 180C to an acid number of 1-3 mg KOH/g, removing excess glycol under 10 mm Hg pres-

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L 27786-65

ACCESSION NR: AP5004308

sure. The product contained 9-10% hydroxyl groups and was reesterified with an equivalent amount of diethylphenylphosphinate under nitrogen, 6 hrs. at 160C and 18-25 hrs. at 180C. Removal of low-molecular compounds at 180C and 5 mm Hg gave unsaturated polyesters of 80-85 acid number, negligible hydroxyl content, 400-500 molecular weight, and 7% phosphorus content. The ester was polymerized in metal forms with styrene and 0.2-0.5% bis-tert.-butyl peroxide or 0.2% benzoyl peroxide for 8-10 hrs. at 80C and 12 hrs. at 100C, or with a mixture of styrene-methyl methacrylate and 0.2% benzoyl peroxide for 15-20 hrs. at 100C. Analysis of the products of reesterification indicated that polymerization does not occur during this process and that only one ethoxy group of the phenylphosphinate is replaced by low molecular polyfumarate. Formulas for the mixture of polyesters are proposed. Copolymers of 80 and 70% polyester, 10 and 15% styrene, and 10 and 15% methyl methacrylate had densities of 1.28 and 1.3 g/cc, they adsorbed 0.37 and 0.25% water, had impact strengths of 20-25 and 15 kg.cm/cm² and a weight loss of 6 and 10% at 200C in 24 hrs., and were self-extinguishing with a weight loss of 5 and 9%, respectively. Elongation under load increased rapidly at 250-300C. Orig. art. has: 4 tables, 1 figure, and 5 formulas.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: 00

NO REF SOV: 007
Card 2/2

OTHER: 000

KOPYLOV, A.M. (Leningrad)

From the history of the first hospitals in St. Petersburg.
Sov. zdrav. 21 no.2:57-59 '62. (MIRA 15:3)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof.
S.Ya. Freydlin) i Leningradskogo meditsinskogo instituta imeni
akademika I.P. Pavlova (dir. - dotsent A.I. Ivanov).
(LENINGRAD—HOSPITALS)

KOPYLOV, A.M. (Leningrad)

Hospital affairs in Petrograd during the first years of Soviet power.
Sov. zdrav. 21 no.6:76-80 '62. (MIRA 15:5)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof. S.Ya. Freydlin) Leningradskogo meditsinskogo instituta imeni Pavlova (dir. - dotsent A.I.Ivanov).
(LENINGRAD--HOSPITALS)

KOPYLOV, A.M. (Leningrad)

History of St. Petersburg hospitals. Sov.zdrav. 19 no.5:33-37 '60.
(MIRA 13:9)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof. S.Ya.
Freydlin) i Leningradskogo meditsinskogo instituta im. akademika
I.P. Pavlova (dir. - dotsent A.I. Ivanov).
(LENINGRAD--HOSPITALS)

KOPYLOV, A.M. (Leningrad)

Names of hospitals in Leningrad. Sov. zdrav. 19 no. 8:69-73 '60.
(MIRA 13:10)

1. Kafedra organizatsii zdravookhraneniya (zav. - prof. S.Ya.
Freydlin) I Leningradskogo meditsinskogo instituta imeni akad.
I.P. Pavlova (dir. A.I. Ivanov).
(LENINGRAD--HOSPITALS)

KOPYLOV, A.M.

Development of hospital service in Leningrad. Zdrav. Ros. Feder. 6
no.3:23-26 Mr '62. (MIRA 15:4)

1. Kafedra organizatsii zdravookhraneniya (zav. - prof. S.Ya.Freydlin)
I Leningradskogo meditsinskogo instituta imeni akademika Pavlova (dir.-
dotsent A.I.Ivanov). (LENINGRAD--HOSPITALS)

85660

53630 2209, 1287, 1266

S/079/60/030/009/017/022/XX
B001/B066AUTHORS: Petrov, K. A., Gavrilova, A. I., and Kopylov, A. M.TITLE: Ethylene Amido Phosphonates 7PERIODICAL: Zhurnal obshchey khimii, 1960. Vol. 30, No. 9.
pp. 2863 - 2868

TEXT: Ethylene amido phosphonates and thiophosphates containing some ethylene amide groups in the molecule have active biological properties (cf. Ref. 1). The present paper describes the following amido phosphonates hitherto unknown: N,N'-diethylene amide of chloro-methyl phosphinic acid, N,N'-diethylene amide of β -chloro-ethyl phosphinic acid, N,N'-diethylene amide of vinyl phosphinic acid, N,N'-diethylene amide of N"-piperidino- β -ethyl phosphinic acid, and N, N', N'', N'''-tetraethylene amide of ethylene diphosphonic acid (Ref. 2). N,N'-diethylene amide of chloro-methyl phosphinic acid was obtained from ethylene imine and the acid dichloride of the latter (Ref. 3). N,N'-diethylene amide of β -chloro-ethyl phosphinic acid was synthesized

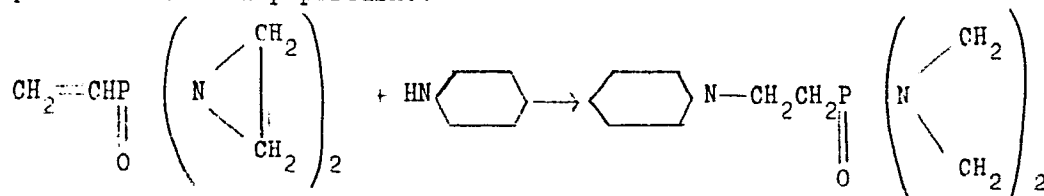
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Ethylene Amido Phosphonates

S/079/60/030/009/017/022/XX
B001/B066

in the same way. As previously, also in this case only two chlorine atoms which are directly bound to the phosphorus, were substituted. The chlorine atom in the β -position of the acid chloride is partially split off as HCl, which gives an end product that is slightly contaminated by the diethylene amide of vinyl phosphinic acid which is difficult to separate. The chlorine content of the end product repeatedly fractionated in a vacuum was always lower than the theoretical chlorine content, which is due to partial separation of HCl and formation of the above diamide. N,N'-diethylene amide of vinyl phosphinic acid in a high yield resulted from ethylene imine and the acid dichloride of vinyl phosphinic acid. N,N'-diethylene amide of N"-piperidino- β -ethyl phosphinic acid was obtained by reacting the diamide of vinyl phosphinic acid with piperidine:



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Ethylene Amido Phosphonates

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B001/B066

If no alcoholate is used (as a catalyst), this reaction gives only a small yield. N, N', N'', N'''-tetraethylene amide of ethylene diphosphonic acid was obtained by reacting the acid tetrachloride of ethylene diphosphinic acid with ethylene imine. This reaction had to be carried out, not in dry benzene (as in the first case), but in dry chloroform. The fractional recrystallization of the tetramide was effected from benzene. There are 1 table and 5 references: 1 Soviet, 1 German, 2 US, and 1 Japanese.

SUBMITTED: August 18, 1959

Card 3/3

PETROV, K.A., GAVRILOVA, A.I. KOPYLOV, A.M.

Ethyleneamidophosphonates.

Khimiya i Primeneniye Fosfororganicheskikh Soedineniy (Chemistry and application of organophosphorus compounds) A. YE. A. KOPYLOV, Ed.
Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962. 432 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

NIKITIN, G.G.; KOPYLOV, A.P.

New three-dimensional plywood elements. Sbor. nauch. trudov LISI
no.34:63-77 '61. (MIRA 15:8)

(Plywood) (Roofs)

KOPYLOV, A.S.

Experience in organizing steady continuous work. Tekst.prom. 14
no.7:45-47 J1 '54. (MIRA 7:8)

1. Glavnyy inzhener Ivanovskoy fabriki im. Kirova.
(Textile industry)

KOPYLOV, A.Ye, fel'dsher

Physical therapy. Fel'd. i akush. no.9:18-21 S '54. (MIRA 7:11)

**1. Fel'dshersko-akusherskiy punkt sovkhosa imeni Dzerzhinskogo
Irkutskoy oblasti.
(PHYSICAL THERAPY)**

KOPYLOV, B.F.; LENEDEV, P.A.; CHERDANTSEVA, M.V. (Leningrad)

"Small-base semiconductor film transformers as applied to the investigation of dynamic parameters of mechanisms".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

S/803/62/000/002/004/006

AUTHORS: Kopylov, B.I., Kuvshinnikov, B.A.

TITLE: A regulator with intermediate coding.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Avtomatika i telemekhanika.
no. 2. 1962, 28-33.

TEXT: The paper describes the development of a new type of regulator for the automatization of objects with great inertia. A block scheme of a discretely-acting regulating system is set forth. In it the output quantity of the object of the regulation and the prescribed value of that quantity are matched or compared in a comparison element. The value of the error obtained as a continuous function of time is transformed into the form of a pulse by means of a coding system and is fed into a second comparison element. Another input of the second comparison element receives a regulating action which is also transformed into the form of pulses by a coding feedback. The difference output is decoded to obtain a controlling action. The presence in the system of signals in the form of pulses permits an almost limitless variation of transformation to obtain an optimal regulation process. The design scheme of the control system is depicted separately, and an analysis is made of the transient characteristics of the object of the control, including its normalized

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A regulator with intermediate coding.

S/803/62/000/002/004/006

amplitudinal phase characteristic. It is noted that the design of a discrete regulator according to the scheme proposed here constitutes one of the first attempts in this direction. Additional detailed theoretical investigation and an improvement of several of the elements of the regulator are needed; in particular, it appears possible to change over to contactless decoding equipments and the employment of semiconductors in it. It is noted that, since the system yields an error signal in binary code, digital computers may be employed in the control system. There are 5 figures and 2 Russian-language Soviet references.

Card 2/2

KOPYLOV, B.M.; RADZIYEVSKIY, A.V.;redaktor; LUZHETSKIY, N.N., redaktor;
MOROZOVA, G.M., tekhnicheskiiy redaktor

[Improving the quality in the operation of radio rediffusion networks] Povyshenie kachestva ekspluatatsii radiotranslatsionnykh setei; iz opyta raboty Leningradskoi gorodskoi radiotranslatsionnoi seti. Moskva, Gos.isd-vo lit-ry po voprosam svyazi i radio, 1953. 46 p. [Microfilm] (MLRA 8:10)
(Radio--Transmitters and transmission)

KOPYLOV, B.M.

SIDOROV, M.; KOPYLOV, B.

Radio

My work experience at the operation section. Sov. sviaz. 3, No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

KOPYLOV, B.M.

Using automatic coordinatometers for adjusting railroad curves.
Trudy LTA no.86:29-41 '58 (MIRA 13:3)

1. Kafedra geodesii Leningradskoy ordena Lenina Lesotekhnicheskoy
akademii imeni S.M. Kirova.
(Railroads--Track)

GUL', Sergey Mikhaylovich; KAMENEV, Nikolay Pavlovich; KOPYLOV, Boris Mikhaylovich; KRUKOVSKIY, Ignatiy Vladislavovich; NEDOSEKIN, Dmitriy Fedorovich; SEMERIKOV, Ivan Vasil'yevich; BARINOV, V.A., prof., doktor, retsenzent; KERNOV, L.S., prof., doktor, retsenzent; KRASNOSHCHENKOV, A.N., prepodavatel', retsenzent; POLUNICHEV, I.A., red. izd-va; BACHURINA, A.M., tekhn. red.

[Laboratory manual of geodesy] Rukovodstvo dlia prakticheskikh zaniatii po geodesii. Moskva, Goslesbunizdat, 1960. 266 p. (MIRA 14:7)

1. Moskovskiy lesotekhnicheskii institut (for Barinov). 2. Moskovskiy institut inzhenerov vodnogo khozyaystva imeni Ye.R.Vil'yamsa (for Khrenov). 3. Tsentral'nyy zaachnyy lesotekhnicheskii tekhnikum (for Krasnoshechekov)

(Surveying—Handbooks, manuals, etc.)

AKHAPKINA, A.I., nauchnyy sotr.; GORYACHEVA, L.M., nauchnyy sotr.; ISTOMINA, I.V., nauchnyy sotr.; KASHIKHIN, L.S., nauchnyy sotr.; ROZHKOVA, T.D., nauchnyy sotr.; KOPYLOV, D.I., kand. istoricheskikh nauk, red.; VOROB'YEV, M.A., red.; OVECHKIN, L.T., tekhn. red.

[Thirty years of the Yamal-Nenets National Area] 30 let Yamalo-Nenetskogo okruga; istoriko-ekonomicheskii ocherk. Tyumen', 1960.
87 p. (MIRA 14:10)

1. Tyumen' (Province) Upravleniye vnutrennikh del. Arkhivnyy otdel.
2. Tyumenskiy oblastnoy Gosudarstvennyy arkhiv, Tobol'sk (for Akhapkina, Goryacheva, Istomina, Kashikhin, Rozhkova).
(Yamal-Nenets National Area—Economic conditions)

BELOUSOV, P.I., kandidat meditsinskikh nauk; KOPYLOV, F.A., professor, direktor.

Apparatus for exercises following splitting of the forearm stump. Vest.khir.
73 no.5:46-48 S-0 '53. (MLRA 6:11)

1. Leningradskiy nauchno-issledovatel'skiy institut protezirovaniya.
(Amputations of arm) (Medical instruments and apparatus)

KOPYLOV, F.A.

NOVOSELOVA, A.I.; GODUNOV, S.F., doktor meditsinskikh nauk, zaveduyushchiy;
KOPYLOV, F.A., professor, direktor.

Lymphangioma of the right leg. Vest.khir. 73 no.5:65-66 S-0 '53.
(MIRA 6:11)

1. Klinika protsesirovaniya Leningradskogo nauchno-issledovatel'skogo instituta
protsesirovaniya. (Lymphatics--Tumors) (Leg--Tumors)

KOPYLOV, F.A., professor; KOSTILEVA, L.A.

**Pediatric prosthetics in the U.S.S.R. Ortop., travm. i protez.
18 no.1:10-15 Ja-F '57. (MIRA 10:6)**

**1. Iz Leningradskogo nauchno-issledovatel'skogo instituta
protesirovaniya (dir. - prof. F.A.Kopylov)
(ARTIFICIAL LIMB, in inf. and child
prosthetics in Russia)**

KOPYLOV, F.A.

In memory of V.A.Betekhtin. Ortop.travm. i protez. 18 no.6:83
N-D '57. (MIRA 11:4)
(BETEKHTIN, VLADIMIR ALEKSANDROVICH, 1875-1957)

KOPYLOV, F.A., prof.

In memory of G. A. Al'brekht, on his 80th birthday, and the 25th anniversary of his death.. Ortop. travm. protez., Moskva 19 no.6:68-73
N-D '58. (MIRA 12:1)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta protezirovaniya (dir. - prof. F. A. Kopylov).

(BIOGRAPHIES

Al'brekht, German A. (Rus))

(ORTHOPEDICS

contribution of German A. Al'brekht (Rus))

KOPYLOV, F.A., prof.

Levels and technics of amputation. Ortop., travm. i protez.
20 no.5:73-76 My '59. (MIRA 12:9)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta
protezirovaniya (dir. - dotsent M.V.Strukov).

(AMPUTATION

technics & levels of amputation (Rus))

KOPYLOV, F.A., prof. (Leningrad)

Current status of prosthesis and prospects for its development.

Ortop. travm. i protez. 21 no. 9:20-24 S '60.

(MIRA 13:12)

(PROSTHESIS)

KOPYLOV, F.A., prof.; BELOUSOV, P.I., doktor med.nauk; PEVZNER, M.S.,
doktor med.nauk

Clinics for the application of prosheses. Ortop.travm.i protez.
22 no.4:50-54 Ap '61. (MIRA 14:11)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta protezi-
rovaniya (dir. - dotsent M.V. Strukov). Adres avtorov: Leningrad,
prosp. Karla Marksa, d.9, Institut protezirovaniya.
(REHABILITATION CENTERS) (PROSTHESIS)

KOPYLOV, Fedor Aleksandrovich; PEVZNER, Mendel' Samuilovich;
NOVOZHILOV, D.A., red.; LEBEDEVA, G.T., tekhn. red.

[Medical principles for prosthesis] Meditsinskie osnovy pro-
tezirovaniia. Leningrad, Medgiz, 1962. 198 p. (MIRA 16:1)
(PROSTHESIS)

KOPYLOV, G.

Kopylov, G. "The physical reasons for the transmigration of birds,"
Illustrated by A. Orlov, Zhanibe-sila, 1942, No. 11, p. 24-25

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

ORLOV, A.I.; KOPYLOV, G.A.

Effect of preliminary sulfatizing roasting on the recovery
of copper from oxidized and mixed copper ores. Trudy IPI
no.18:48-55 '63. (MIRA 17:6)

ORLOV, A.I.; KOPYLOV, G.A.; TRAVNIKOVA, L.B.

Enlarged laboratory testing of the hydrometallurgy of
mixed low-grade ores. Trudy IPI no.18:71-78 '63.
(MIRA 17:6)

KOPYLOV, G.A.

Copper determination with the help of a recording polarograph. Trudy IPI no.18:173-176 '63. (MIRA 17:6)

KOPYLOV, G.A.; ORLOV, A.I.

Investigating the kinetics of dissolution of malachite. Trudy
Inst.met.i obog. AN Kazakh.SSR 11:83-89 '64.

(MIRA 18:4)

Kopylov, G.I.

CALCULATIONS: GRAPHIC METHODS

"Templates for the Calculation of Decay Energy", by G.I. Kopylov,
Electrophysics Laboratory, Academy of Sciences USSR, Pribery i Tekhnika
Eksperimenta, No 2, September-October 1956, pp 76-77.

Two types of simple templates are proposed for the calculation of the energy liberated in the decay of a particle into two other particles with known masses and momenta. A template is also proposed with which it is possible to recognize rapidly hyperons and K-mesons.

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KOPYLOV, G.I.

AUTHOR: Kopylov, G. I.

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000824520011-8

TITLE: On the Energy Distribution in Two Particles Decay Reactions (Ob-
energeticheskikh raspredeleniyakh v reaktsiyakh raspada na dve
chastitsy)

PERIODICAL: Zhurnal Eksperim i Teoret. Fiziki, 1957, Vol. 33, Nr 2(8), pp. 430-
-441, (USSR)

ABSTRACT: The present paper investigates the isotopic decay into two particles in the laboratory system. Within a certain volume the reaction $A \rightarrow a_1 + a_2$ takes place, that means the decay of particles with the mass M , the momentum P and the total energy E into two particles with the masses, momenta and energies $m_1, m_2, p_1, p_2, e_1, e_2$. The present paper is arranged in the following sections: The initial formula, the ascertainment of the spectrum of the primary particle, then of the other second particle, the interior properties of the spectrum of the secondary particles, the spectra of the products of the cascade decay, the expansion of the applicability of the formulas. Some deductions: In the case of the decay of two particles it is useful to introduce the parameter $v = \text{Arch} \frac{e}{m} = \text{Arch}(e/m) = \ln((e+p)/m)$ to explain the connection between the energy spectrum of decay and the value of the energy spectrum averaged the angle. The distribution of the decay products with respect to this parameter ("v-spectrum") shows certain simple properties quite independent from

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56-2 18/47

On the Energy Distribution in Two Particles Decay Reactions.

the energy distribution of the primary particle, which are given here. With the help of these properties the primary particle can be identified on the basis of their mass. These properties of the v -spectra hold only for certain conditions (which are given here). The formulae for the energy spectrum of the particle are suitable to be employed for experiments with emulsions and chambers, where no special direction of observation is preferred. On the basis of the results of certain preliminary papers, however, the formulas deduced here can also be used for counters (There are 3 figures, 1 table and 3 Slavic references)

ASSOCIATION: United Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

SUBMITTED: February 11, 1957

AVAILABLE: Library of Congress

Card 2/2

BOV/120-56-4-3/50

AUTHORS: Kopylov, G. I. and Podgoretskiy, M. I.

TITLE: Multiple Scattering of Relativistic Particles in an Absorber between Two Collimators (Mnogokratnoye rasseyaniye relyativistskikh chastits v fil'tre mezhdu dvumya kollimatorami)

PERIODICAL: Priory i tekhnika eksperimenta, 1958, Nr 4, pp 22-23 (USSR)

ABSTRACT: The **increase in the path length** of fast charged particles due to multiple scattering in the absorber between two collimators is calculated. Pomeranchuk (Ref.1) has estimated the **increase in the path length** of a particle in an absorber due to multiple scattering. In his calculation, the coordinates and the direction of the particle at the point of entry and the point of exit could be arbitrary. To a researcher it is of interest to have the above quantity in the case where the absorber is placed between two long and narrow collimators. In this case the position and direction of the particles at points of entry and exit in the absorber are completely defined (Fig.1). It is well-known (Ref.2) that the probability $F(r, y, \vartheta)$, that a particle at a depth r will have a displacement y and a direction ϑ is, for small values of ϑ , proportional to $\exp[-w^2 r^{-3} (r^2 \vartheta^2 - 3xy\vartheta + 3y^2)]$ where w depends on the energy of the

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SOV/120-58-4-3/30

Multiple Scattering of Relativistic Particles in an Absorber
between Two Collimators

particle (ionisation energy losses in the absorber are neglected). It follows that the probability that, at a depth τ a particle will have a displacement y and a direction θ , under the condition that at the point of exit, i.e. $\tau = t$, the displacement and the direction will be y_1 and θ_1 respectively, is proportional to the product $F(\tau, y, \theta)F(t, y_1 - y - T\theta, \theta_1 - \theta)$. Integrating over all y , we obtain a quantity which is proportional to the probability that at a depth τ the particle will have a direction θ and this is given by:

$$W(\tau, \theta) \propto \exp \left\{ - \left[\frac{w^2}{4\tau} (\tau^3 + T^2) \right] \times \left[t^4 T^{-1} \theta^2 + 2(2T - \tau) t^2 \theta_1 \theta - 12\tau y_1 \theta + 12\tau y_1^2 - 12\tau^2 y_1 \theta_1 + (\tau^3 + 4T^3) \theta_1^2 \right] \right\} \quad (1)$$

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Multiple Scattering of Relativistic Particles in an Absorber between Two Collimators

The quantity $\overline{\theta^2}$ can be determined from Eq.(1). In accordance with Eq.(1) the required average increase in the range may be obtained from the integral

$$\Delta \overline{s} = \int_0^t \overline{\theta^2} d\tau \quad \text{and turns out to}$$

$$\text{be } \Delta \overline{s} = 2/15 t^2 w^{-2} \quad (2)$$

A similar calculation in Ref.1 led to the expression

$\Delta \overline{s} = t^2 w^{-2}$. Thus the presence of the collimators reduces the increase in the path length of the particle as found in Ref.1 by a factor of 7.5 which, in practical cases, corresponds to a fraction of a percent. A simple calculation shows that the maximum value of the mean square angle of the track of the particle to a straight line is equal to $1/12 t^2 w^{-2}$. This is less by a factor of 8 than the corresponding quantity in the absence of the collimators. The maximum of the mean square scattering angle for particles which pass both the collimators is found at a distance of $1/6(3 - \sqrt{3})t$

Card 3/5 from the face of the absorber and is equal to $1/6 t w^{-2}$.

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Multiple Scattering of Relativistic Particles in an Absorber between Two Collimators

This is less by a factor of 24 than the maximum value of the mean square of the angle in the absence of the collimators. In Ref.2 the 2-dimensional case was generalised to include the general 3-dimensional case. In the general case, if the position of the collimators in space is characterised relative to an axis A by the displacement and direction vectors \mathbf{r} and $\mathbf{\theta}$, we find that:

$$\Delta \bar{s} = (2/15)t^2 w^2 + (2t^2 \theta^2 - 3t \theta r + 18r^2)/15t \quad (3)$$

It is of interest to solve this problem in the case where, at the exit from the filter, either only the position \mathbf{r} or only the direction $\mathbf{\theta}$ of the particles are fixed. In this case Eq.(1) should be averaged over θ_1 or y_1 . In

the first case one obtains:

$$\Delta \bar{s} = 1/5(t^2 w^{-2}) + 4.8r^2 t^{-1} \quad ,$$

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SOV/120-58-4-3/30

Multiple Scattering of Relativistic Particles in an Absorber between
Two Collimators

and in the second:

$$\Delta \bar{s} = 1/3 (t^2 w^{-2}) + 1/6 t \theta^2 .$$

There is one diagram illustrating the symbols used in the
text and two references, both of which are Soviet. This
is a complete translation.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United
Institute for Nuclear Studies)

SUBMITTED: October 14, 1957.

Card 5/5

KOPYLOV, G.I.

Model of the multiple production process [with summary in
English]. Zhur. eksp. i teor. fiz. 35 no.6:1426-1434 D '58.
(MIRA 12:3)

1.Ob'yedinennyy institut yadernykh issledovaniy.
(Particles, Elementary)

67519

SOV/155-59-1-23/30

~~24(5), 24(7)~~ 24.6300

AUTHOR: Kopylov, G.I.

TITLE: Kinematic Analysis of Angular Distributions

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskkiye nauki,
1959, Nr 1, pp 150-157 (USSR)

ABSTRACT: If simultaneously many particles are produced with high energies, then the determination of the energy spectrum is very difficult by the difficulties of energy measurement. In this connection the author investigates the possibility to obtain the energy spectrum of secondary particles in the system of the center of mass with respect to their angular distribution in the reference system of the laboratory. Some special cases are considered and the following results are obtained : If the angular distribution of slow secondary particles ($e^+ \rightarrow m\gamma$, the star denotes the system of the center of mass) is measured in the laboratory system if its angular distribution in the system of the center of mass is known and independent from the energy of the particles, then the energy spectrum can be determined in the system of the center of mass. If the separation of the slow and quick particles is not possible, then

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21(7), 24(5)

AUTHOR: Kopylov, G. I.

SOV/56-36-5-64/76

TITLE: The Results of Modelling the
pp-Interaction at 10 BeV (Rezul'taty modelirovaniya
pp-vzaimodeystviya pri 10 BeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 5, pp 1598-1600 (USSR)

ABSTRACT: The author of the present "Letter to the Editor" developed
a model for the processes of multiple
production (Refs 1, 2), and tabulated 200 stars for the
case of a 10 BeV pp-interaction; the table contains all
possibilities of star formation connected with a production
of 1 - 6 mesons; the statistical bases of tabulation were
published in reference 3. In the present report the author
describes several results obtained by an evaluation of this
table for some special cases: Investigation of the momentum
spectrum for nucleons and mesons in the center of mass
system (according to reference 4), momentum spectrum of
p, π^+ and π^- in the laboratory system; comparison of
charged particles departing from a star with respect to

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The Results of Modelling the
pp-Interaction at 10 Bev

SOV/56-36-5-64/76

one another (Ref 5), (Figs 1 - 3). Finally, the case of the correlation coefficients between the directions of the rays and the number of narrow pairs in nuclear disintegrations, which was dealt with by Gramenitskiy et al. (Ref 6) is discussed, and it is shown in what way it is possible to determine these coefficients by means of the star table. For the quantities Q (cf. Ref 6, Table 1) which are connected with the correlation coefficients, 0.32 ± 0.06 and 0.00 ± 0.07 is obtained. The author finally thanks M. I. Podgoretskiy for his interest in this investigation and for discussion. There are 3 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: February 9, 1959

Card 2/2

21(8)

AUTHOR:

Kopylov, G. I.

SOV/56-37-2-37/56

TITLE:

The Identification of Particles in High-energy Stars

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 2(8), pp 557-558 (USSR)

ABSTRACT:

Particles in high-energy stars are frequently identified by a comparison of the measured momentum p_1 of one of the particles, 1, with the possible extremal momentum values under certain assumptions concerning the mass and the number of the remaining particles 2, 3, ..., n. The latter are combined into a composite particle with the effective mass m_{eff} . $\bar{m} = m_2 + m_3 + \dots + m_n$ is generally chosen for m_{eff} . It is assumed that the magnitude and the directions of the velocities of the particles 2, 3, ..., n are equal. It is shown that the maximum and minimum values for the momentum of the first particle $p_{1\text{max}}$ and $p_{1\text{min}}$ can be made to approach each other if the angles φ_{ij} between the other charged particles i and j ($i, j = 2, 3, \dots, n$) are

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The Identification of Particles in High-energy Stars SOV/56-37-2-37/56

taken into account and if the lower limit \tilde{p}_1 of their momenta p_1 is evaluated. After several steps of calculation the required formula $m_{\text{eff}}^2 \geq \tilde{m}^2 \equiv \bar{m}^2 + \Delta^2 \equiv \bar{m}^2 + 2 \sum_{2 \leq i < j}^{n'} \tilde{p}_i \tilde{p}_j (1 - \cos \vartheta_{ij})$

is obtained. The summation goes over all pairs of charged particles (with the exception of particle 1). The masses of the neutral particles are contained in \bar{m} . If \tilde{m} is used instead of \bar{m} for m_{eff} , $p_{1\text{min}}$ and $p_{1\text{max}}$ will approach the more, the larger \tilde{p}_1 and ϑ_{ij} are. For narrow beams of secondary particles the use of the above formula is of no advantage. The results of this report will be discussed in detail in a later publication. The author expresses his gratitude to I. M. Gramenitskiy and M. I. Podgoretskiy for valuable information. There are 5 references, 4 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: April 17, 1959
Card 2/2

24 4000 1136, 1137, 1158

S/124/60/000/012/001/009
A005/A001

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 12, p. 10, # 15543

AUTHORS: Zav'yalov, Yu.S., Kopylov, G.I.

TITLE: The Special Case of the Motion of a Body of Variable Mass

PERIODICAL: Tr. Tomskogo un-ta, 1959, Vol. 144, pp. 94-96

TEXT: The authors consider the motion of a body of variable mass around a fixed point under the following conditions: 1) the absolute velocities of the separating particles are equal to zero; 2) the coordinate axes connected with the body remain the main inertia axes during the process of the body mass variation. 3) the inertia ellipsoid is an ellipsoid of revolution; 4) the main moment of the external forces with respect to the fixed point is equal to zero. Under these conditions, the Euler equations are reduced to the motion equations of a body of constant mass with regular precession and can be solved by elementary functions. The problem is pursued to the end result under the condition that the inertia moments are known time functions.

M.I. Yefimov

Translator's note: This is the full translation of the original Russian abstract.

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16.7300

S/044/60/000/009/012/021
C111 /C222

AUTHORS: Zav'yalov, Yu.S., and Kopylov, G.I.

TITLE: A Special Case of the Motion of a Body With a Variable Mass

PERIODICAL: Referativnyy zhurnal. Matematika, 1960, No.9, p.93,
Abstract No.10379. Tr.Tomskogo un-ta, 1959, Vol.144, pp.94-96

TEXT: The motion equations of a body with a variable mass and a fixed point are considered for the case that the absolute velocities of the particles which separate from the body are equal to zero. In this case these equations, with the usual notations, have the form:

$dA_p/dt + (C-B)qr = M_x, \dots$. The authors consider the equations of the rotary motion of the body under the conditions: 1) $M_x = M_y = M_z = 0$ and 2) $A = B$, and they show that the motion equations in this case are integrable in quadratures and the Eulerian angles are expressed by the

formulas: $\varphi = C_0 R \int_t^{\infty} \frac{A-C}{AC} dt$, $\theta = \arccos \frac{C_0 R}{K}$, $\psi = \psi_0 + K \int_{t_0}^t \frac{dt}{A}$, where

C_0, R, K, ψ_0 are constants.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

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84978
S/056/60/038/005/056/057/XX
B006/B070

24.6100

AUTHORS: Kopylov, G. I., Lomakina, Z. D.

TITLE: The Problem of a Direct Reduction of the Elastic Scattering Amplitude

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1649 - 1651

TEXT: The problem of the reduction of the scattering matrix¹⁹ has been studied by L. D. Puzikov, R. M. Ryndin, and Ya. A. Smorodinskiy (Ref. 1), and it was suggested that, instead of making a phase shift analysis, the system of equations be directly solved by using the unitarity conditions. In the present "Letter to the Editor", an attempt is made to find a solution of this system of equations for the simplest case of scattering of spin-zero particles from a center of force. The following system of equations (σ - scattering cross section) has to be solved for the real and imaginary parts $R(\mu)$ and $I(\mu)$ - ($\mu = \cos \theta$) - of the scattering amplitude:

$$R^2(\mu) + I^2(\mu) = \sigma(\mu); \quad I(\mu) = \frac{k}{4\pi} \int_{-1}^1 \int_0^{2\pi} [I(\mu'')I(\mu') + R(\mu')R(\mu'')] d\mu' d\varphi, \text{ with}$$

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The Problem of a Direct Reduction of the
Elastic Scattering Amplitude

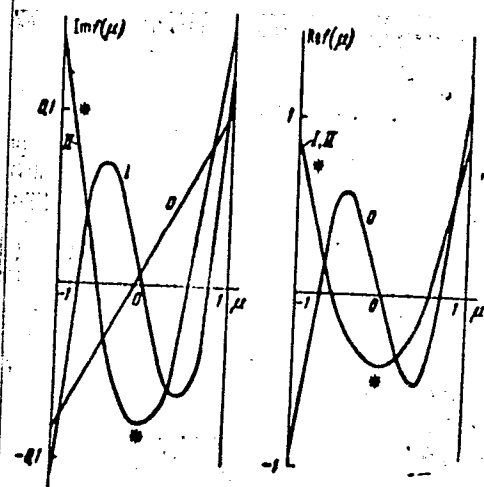
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B006/B070

$\mu'' = \mu\mu' + \sqrt{(1-\mu^2)(1-\mu'^2)} \cos \varphi$. An approximate solution of this system of equations is obtained by means of an electronic computer using Newton's method of iteration. It is found that application of the theory of generalized functions leads already to a convergence if the number of zeros of the solution is not the same as the number of zeros in zero approximation; see Fig. R. M. Ryndin and L. A. Chudov are thanked for suggesting the problem. There are 1 figure and 3 Soviet references. X

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research); Vychislitel'nyy tsentr MGU
(Computation Center of Moscow State University) Z.D.Lomakina

SUBMITTED: March 18, 1960

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04273
S/056/60/038/005/056/057/XX
B006/B070

Convergence of the iteration process. 0, I, II - zero, first, and second approximation, * - exact solution

Card 3/3

KOPYLOV, G.I.

Comments on L.G. Iakovlev's article "Calculation of phase integrals in the covariant formulation of the theory of multiple production of particles". Zhur. eksp. i teor. fiz. 39 no. 1:209 J1 '60.

(MIRA 13:12)

(Particles (Nuclear physics))

02/10

S/056/60/039/004/036/048
B006/B056

24.4500

AUTHOR:

Kopylov, G. I.

TITLE:

A Method of Calculating the Statistical Weights and
Distributions in the Theories of Multiple Production

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 4(10), pp. 1091 - 1098

TEXT: In the present paper a method is described, which makes it possible to obtain the distributions and correlations in arbitrary models of multiple production. In the introduction, the author discusses the problem as such and the difficulties arising in connection with the solution. In the first part, these difficulties are investigated. A system of n particles with the momentum $k(k < n)$ in the rest system of the particles 17
 $k, k+1, \dots, n$ is investigated. The momentum direction is assumed to be arbitrary, the amount of the momentum is assumed to be limited only by the theorem of conservation of energy. Thus, the statistical weights may be calculated, and the physically admissible momenta for the multiple-production models may be determined. Assuming that in such a model part of

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A Method of Calculating the Statistical
Weights and Distributions in the Theories of
Multiple Production

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B006/B056

the particles does not interact with the remaining part, a preliminary calculation of the statistical weights of the independent groups facilitates the model representation of all systems. A table of the random stars, which is compiled for a certain model F_1 , may also be used for investigating other models F_j ; for this purpose it is merely necessary, when setting up histograms, to denote each star of the table by a weight Φ_j/Φ_1 (instead of 1). The construction of such a table in the covariant model is of maximum effectivity (ultrarelativistic case); here, the formulas are of the greatest simplicity. By investigating this model it is possible to simplify the calculation of complex models. For the purpose of obtaining histograms, the Monte-Carlo method is well suited. The author thanks B. N. Valuyev, L. G. Zastavenko, and I. V. Polubarinov for valuable advice. Yu. N. Blagoveshchenskiy is mentioned. There are 1 figure and 12 references: 7 Soviet and 5 US.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: May 11, 1960

Card 2/2

KOPYLOV, G.I.

[Tables of phase volumes] Tablitsy fazovykh ob'emov. Dubna, Ob'edinennyi in-t iadernykh issledovani, 1961. 35 p. (MIRA 14:10)
(Nuclear physics—Tables, etc.)

89214

S/056/61/040/001/020/037
B102/B204

24-6100

AUTHORS: Granovskiy, Ya, I., Kopylov, G. I.

TITLE: Estimate of the part played by the theorem of conservation of momentum in the statistical theory of particle production

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 1, 1961, 180-182

TEXT: In papers on the statistical theory of the multiple production of particles, the opinion has repeatedly been voiced that the anisotropy in angular distribution is a consequence of the fact that the theorem of conservation of angular momentum is not applied to such events, that, in fact, particles in the final state have the same angular momentum as in the initial state. This opinion is shown to be not quite justified. For the most simple classical case of a conservation of the z component of the angular momentum during multiple meson production, the problem is investigated as to the extent to which the statistical theory is influenced. It is found that consideration of conservation of the angular momentum practically does not

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89214

S/056/61/040/001/020/037
B102/B204

Estimate of the part played by the...

change the statistical theory. The anisotropy thereby caused in angular distribution is considerably less than the one observed. In detail, the studies (see also Refs. 4-6) yielded the following results: 1) The statistical weights after normalization differ only little from the corresponding quantities of the statistical Fermi theory, so that multiplicity practically does not change (instead of $\bar{n}_s = 3.68$ one obtains 3.70). This refers also to the momentum distribution. As soon as the energy approaches the reaction threshold, the cross section decreases more slowly than according to the Fermi theory. 2) The anisotropy in angular distribution decreases with increasing number of particles. If the anisotropy is characterized by ratios between the numbers of particles moving with the same solid angles ($0^\circ \leq \theta \leq 60^\circ$ and $60^\circ \leq \theta \leq 90^\circ$), it is for 2, 3, 4... secondary particles equal to 2.5, 1.29, 1.22, ...; 3) Also the correlative angular distribution among the particles hardly changes. However, the following interesting fact was established: The mean value of the angle $\bar{\theta}_{ik}$ coincides with the mean value of the angle $\bar{\varphi}_{ik}$ in the target plane; both depend only on multiplicity. The coincidence effect occurs also in the Fermi model

Card 2/3

Estimate of the part played by the...

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B102/B204

There are 7 Soviet-bloc references.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR
(Institute of Nuclear Physics, Academy of Sciences Kazakhskaya
SSR)

SUBMITTED: July 4, 1960

X

Card 3/3

KOPYLOV, G.I.; POLUBARINOV, I.V.

A numerical method of calculation of Feynman graphs. Dubna,
Ob"edinennyyi in-t iadernykh issl. 1962. 5 p.
(No subject heading)

KOPYLOV, G. I. and POLUBARINOV, V. I. (1)

"A New Method of Calculation of Feynman Graphs"

report presented at Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Laboratory of High Energy Physics
Laboratory of Theoretical Physics, Dubna, 1962

Joint Inst. Nuclear Research, Dubna

KOPYLOV, G. I. and POLUBARINOV, I. V.

"Vector Meson Pair Photoproduction"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Laboratory of High Energy Physics
Laboratory of Theoretical Physics, Dubna, 1962

KOPYLOV, G. I.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Theoretical and Experimental Physics 1962.

"Modeling of Multiple Production."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

VAN YU-CHAN [Wang Yung-ch'ang]; KIM KHI IN; KLDNITSKAYA, Ye.N.;
KOPYLOV, G.I.; KUZNETSOV, A.A.; MEL'NIKOVA, N.N.; NGUYEN
DIN TY; SOKOLOVA, Ye.S.

[Search of radiative decays of resonances involving Λ -
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ACCESSION NR: AP4031153

S/0056/64/046/004/1320/1330

AUTHORS: Kopylov, G. I.; Polubarinov, I. V.; Semashko, G. L.

TITLE: Estimate of the cross section for the photoproduction of vector boson pairs

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1320-1330

TOPIC TAGS: vector boson, intermediate vector boson, weak interaction, vector boson pair photoproduction, photoproduction in proton, photoproduction in nucleus, nonrelativistic limit, random star calculation, Monte Carlo calculation, Duffin Kemmer algebra

ABSTRACT: The cross section for the photoproduction of pairs of vector bosons with magnetic moment $\gamma = 1$ in nuclei and in protons is calculated in the Born approximation. This is the first published calculation pertaining to pair production in protons. The random star method is used and the calculations cover the entire range of

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energies for which the existing approximate formulas are applicable (up to $q_0 \sim 100$ GeV). The region of applicability of the obtained nonrelativistic and existing ultrarelativistic formulas is determined. The calculations were made with an electronic computer directly from the Feynman diagrams, using a procedure developed by the authors and described elsewhere (preprint, OIYAI D-821, 1961). A formula $\sigma = \sigma_{\text{nonrel.}} (1 + \kappa \tau_3 / \sqrt{q_0})$ is proposed for estimating purposes at intermediate energies and is found to fit the calculated values quite well. The dependence of the cross section of pair production on the atomic number in the case of pair production on nuclei is also evaluated. "In conclusion we are grateful to Professor M. A. Markov for suggesting the problem and for interest in the work, to Om San Ha for great help in solving the problem, and to B. N. Valuyev, V. I. Ogievetskiy and M. I. Shirokov for useful discussions." Orig. art. has: 5 figures, 49 formulas, and 1 table.

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ACCESSION NR: AP4031153

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: 12Sep63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: PH

NO REF SOV: 006

OTHER: 011

Card 3/3